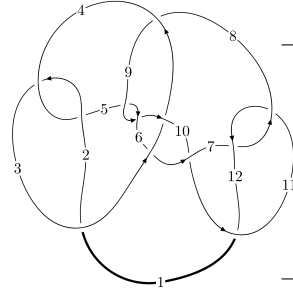
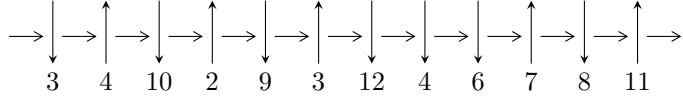


12n<sub>0142</sub> (K12n<sub>0142</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

$$3, 10 \xrightarrow{c_3} 4, 6 \xrightarrow{c_6} 7 \xrightarrow{c_{10}} 11 \xrightarrow{c_2} 2 \xrightarrow{c_1} 1 \xrightarrow{c_9} 9 \xrightarrow{c_5} 5 \xrightarrow{c_8} 8 \xrightarrow{c_{12}} 12 \Rightarrow c_4, c_7, c_{11}$$

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle 2.35580 \times 10^{24} u^{34} + 5.23556 \times 10^{24} u^{33} + \dots + 1.45032 \times 10^{25} b - 1.44449 \times 10^{25}, \\ 2.40552 \times 10^{24} u^{34} + 8.47444 \times 10^{24} u^{33} + \dots + 7.25161 \times 10^{24} a + 1.23374 \times 10^{25}, u^{35} + 2u^{34} + \dots + 2u - 1 \rangle$$

$$I_2^u = \langle b^4 + 4b^3u - 4b^3 - 4b^2u + u - 1, a - u + 1, u^2 - u + 1 \rangle$$

$$I_3^u = \langle b^3 - 3b^2u - 3b^2 + 3bu + 1, a + u + 1, u^2 + u + 1 \rangle$$

\* 3 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 49 representations.

<sup>1</sup>The image of knot diagram is generated by the software “**Draw programme**” developed by Andrew Bartholomew(<http://www.layer8.co.uk/maths/draw/index.htm#Running-draw>), where we modified some parts for our purpose(<https://github.com/CATsTAILs/LinksPainter>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$$I_1^u = \langle 2.36 \times 10^{24} u^{34} + 5.24 \times 10^{24} u^{33} + \dots + 1.45 \times 10^{25} b - 1.44 \times 10^{25}, 2.41 \times 10^{24} u^{34} + 8.47 \times 10^{24} u^{33} + \dots + 7.25 \times 10^{24} a + 1.23 \times 10^{25}, u^{35} + 2u^{34} + \dots + 2u - 1 \rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.331722u^{34} - 1.16863u^{33} + \dots - 6.30773u - 1.70134 \\ -0.162433u^{34} - 0.360993u^{33} + \dots + 0.130097u + 0.995980 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.494155u^{34} - 1.52962u^{33} + \dots - 6.17763u - 0.705356 \\ -0.162433u^{34} - 0.360993u^{33} + \dots + 0.130097u + 0.995980 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.593442u^{34} + 0.968496u^{33} + \dots - 3.97361u + 2.63388 \\ -0.474317u^{34} - 1.15537u^{33} + \dots + 1.27477u + 0.0691574 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.46457u^{34} + 3.18756u^{33} + \dots - 3.14002u + 2.39592 \\ -0.396812u^{34} - 1.06370u^{33} + \dots - 0.108352u + 0.168805 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^6 + u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.03514u^{34} + 2.01243u^{33} + \dots - 4.19611u + 2.30630 \\ -0.466022u^{34} - 1.17415u^{33} + \dots + 0.0947758u - 0.147474 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.214267u^{34} - 0.843549u^{33} + \dots - 2.91396u + 3.23369 \\ -0.447509u^{34} - 0.903401u^{33} + \dots + 3.98711u - 0.173391 \end{pmatrix}$$

(ii) Obstruction class = -1

$$(iii) \text{ Cusp Shapes} = \frac{293178633293666810040513}{1812902632604430856362551} u^{34} - \frac{1485220871768859334081099}{7251610530417723425450204} u^{33} + \dots - \frac{22519370902193600570526111}{1812902632604430856362551} u - \frac{6630145935705280334996315}{3625805265208861712725102}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{35} + 54u^{34} + \dots + 132u - 1$
$c_2, c_4$	$u^{35} - 6u^{34} + \dots - 4u + 1$
$c_3$	$u^{35} + 2u^{34} + \dots + 2u - 1$
$c_5, c_9$	$u^{35} + 3u^{34} + \dots - 83u + 13$
$c_6$	$u^{35} + 2u^{34} + \dots + 178664u + 28669$
$c_7, c_{11}$	$u^{35} + u^{34} + \dots + 4u + 4$
$c_8$	$u^{35} - 2u^{34} + \dots + 342120u + 112661$
$c_{10}$	$u^{35} - u^{34} + \dots - 1020u + 404$
$c_{12}$	$u^{35} - 15u^{34} + \dots - 80u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{35} - 138y^{34} + \dots + 4900y - 1$
$c_2, c_4$	$y^{35} + 54y^{34} + \dots + 132y - 1$
$c_3$	$y^{35} + 6y^{34} + \dots - 4y - 1$
$c_5, c_9$	$y^{35} - 55y^{34} + \dots - 1795y - 169$
$c_6$	$y^{35} + 42y^{34} + \dots - 5590382760y - 821911561$
$c_7, c_{11}$	$y^{35} + 15y^{34} + \dots - 80y - 16$
$c_8$	$y^{35} - 90y^{34} + \dots - 117701124860y - 12692500921$
$c_{10}$	$y^{35} + 15y^{34} + \dots - 4334416y - 163216$
$c_{12}$	$y^{35} + 15y^{34} + \dots + 768y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.604506 + 0.837594I$ $a = -0.448438 - 0.357846I$ $b = 0.689783 + 0.188000I$	$-0.48340 + 2.36916I$	$1.57611 - 4.50521I$
$u = -0.604506 - 0.837594I$ $a = -0.448438 + 0.357846I$ $b = 0.689783 - 0.188000I$	$-0.48340 - 2.36916I$	$1.57611 + 4.50521I$
$u = 0.390242 + 0.879154I$ $a = 0.310445 - 0.133927I$ $b = -0.23755 + 1.43913I$	$2.56414 - 5.90559I$	$4.16775 + 8.40016I$
$u = 0.390242 - 0.879154I$ $a = 0.310445 + 0.133927I$ $b = -0.23755 - 1.43913I$	$2.56414 + 5.90559I$	$4.16775 - 8.40016I$
$u = 0.291312 + 0.893061I$ $a = -0.518425 + 1.133840I$ $b = 1.01576 - 1.21326I$	$-0.669990 - 1.198850I$	$0.589488 - 0.204869I$
$u = 0.291312 - 0.893061I$ $a = -0.518425 - 1.133840I$ $b = 1.01576 + 1.21326I$	$-0.669990 + 1.198850I$	$0.589488 + 0.204869I$
$u = 0.201059 + 0.882276I$ $a = 0.570013 - 0.061429I$ $b = -1.146370 + 0.781662I$	$3.35367 + 0.99605I$	$6.08668 + 0.22244I$
$u = 0.201059 - 0.882276I$ $a = 0.570013 + 0.061429I$ $b = -1.146370 - 0.781662I$	$3.35367 - 0.99605I$	$6.08668 - 0.22244I$
$u = -0.396959 + 0.761909I$ $a = 0.353852 - 0.098553I$ $b = -0.252788 - 0.797693I$	$0.24170 + 1.75473I$	$-0.43635 - 4.44927I$
$u = -0.396959 - 0.761909I$ $a = 0.353852 + 0.098553I$ $b = -0.252788 + 0.797693I$	$0.24170 - 1.75473I$	$-0.43635 + 4.44927I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.985569 + 0.598689I$ $a = -1.338090 + 0.075762I$ $b = 0.543514 - 1.234170I$	$-5.47439 - 0.97053I$	$-6.95717 + 0.21297I$
$u = 0.985569 - 0.598689I$ $a = -1.338090 - 0.075762I$ $b = 0.543514 + 1.234170I$	$-5.47439 + 0.97053I$	$-6.95717 - 0.21297I$
$u = -0.975167 + 0.760910I$ $a = -1.202040 + 0.021054I$ $b = 1.02372 + 1.38759I$	$-4.82985 + 6.52855I$	$-5.30987 - 5.93880I$
$u = -0.975167 - 0.760910I$ $a = -1.202040 - 0.021054I$ $b = 1.02372 - 1.38759I$	$-4.82985 - 6.52855I$	$-5.30987 + 5.93880I$
$u = -0.704227 + 1.101200I$ $a = -0.164791 - 1.088000I$ $b = -0.89159 + 1.41508I$	$-3.55483 - 0.18354I$	$-5.27168 + 1.44891I$
$u = -0.704227 - 1.101200I$ $a = -0.164791 + 1.088000I$ $b = -0.89159 - 1.41508I$	$-3.55483 + 0.18354I$	$-5.27168 - 1.44891I$
$u = 0.581677 + 1.185630I$ $a = -0.272346 + 1.132270I$ $b = -0.42884 - 2.03294I$	$-3.30526 - 4.99735I$	$-4.49983 + 4.97284I$
$u = 0.581677 - 1.185630I$ $a = -0.272346 - 1.132270I$ $b = -0.42884 + 2.03294I$	$-3.30526 + 4.99735I$	$-4.49983 - 4.97284I$
$u = -0.574590 + 0.262572I$ $a = 0.828257 - 0.616246I$ $b = 0.014775 - 0.612549I$	$-0.98087 + 1.09493I$	$-5.80678 - 3.92220I$
$u = -0.574590 - 0.262572I$ $a = 0.828257 + 0.616246I$ $b = 0.014775 + 0.612549I$	$-0.98087 - 1.09493I$	$-5.80678 + 3.92220I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.978178 + 0.990672I$ $a = 0.991907 + 0.901079I$ $b = -0.57751 - 1.46799I$	$-10.30070 + 3.59687I$	$-2.12620 - 2.06254I$
$u = -0.978178 - 0.990672I$ $a = 0.991907 - 0.901079I$ $b = -0.57751 + 1.46799I$	$-10.30070 - 3.59687I$	$-2.12620 + 2.06254I$
$u = -1.12687 + 0.87702I$ $a = 1.01739 + 0.99553I$ $b = 0.581005 - 1.085740I$	$-15.7264 - 5.1315I$	$-4.99224 + 2.26947I$
$u = -1.12687 - 0.87702I$ $a = 1.01739 - 0.99553I$ $b = 0.581005 + 1.085740I$	$-15.7264 + 5.1315I$	$-4.99224 - 2.26947I$
$u = 0.553000 + 0.079189I$ $a = 1.19162 - 0.95512I$ $b = 0.541286 - 0.641792I$	$0.51946 - 3.30014I$	$-3.55846 + 2.28251I$
$u = 0.553000 - 0.079189I$ $a = 1.19162 + 0.95512I$ $b = 0.541286 + 0.641792I$	$0.51946 + 3.30014I$	$-3.55846 - 2.28251I$
$u = 1.11285 + 0.95383I$ $a = 1.03608 - 0.96278I$ $b = 0.35648 + 1.52175I$	$-17.5409 - 1.1078I$	$-6.65030 + 1.84113I$
$u = 1.11285 - 0.95383I$ $a = 1.03608 + 0.96278I$ $b = 0.35648 - 1.52175I$	$-17.5409 + 1.1078I$	$-6.65030 - 1.84113I$
$u = -0.93478 + 1.13030I$ $a = 1.030020 + 0.817450I$ $b = -1.15562 - 2.30328I$	$-14.8325 + 12.6268I$	$-3.98580 - 6.37716I$
$u = -0.93478 - 1.13030I$ $a = 1.030020 - 0.817450I$ $b = -1.15562 + 2.30328I$	$-14.8325 - 12.6268I$	$-3.98580 + 6.37716I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.98846 + 1.10575I$		
$a = 1.042800 - 0.852917I$	$-16.9917 - 6.5550I$	$-6.22803 + 2.34101I$
$b = -0.75564 + 2.24982I$		
$u = 0.98846 - 1.10575I$		
$a = 1.042800 + 0.852917I$	$-16.9917 + 6.5550I$	$-6.22803 - 2.34101I$
$b = -0.75564 - 2.24982I$		
$u = -0.002637 + 0.401944I$		
$a = -0.40921 - 2.57831I$	$0.99468 + 3.59879I$	$-0.61353 - 4.53406I$
$b = 1.287540 + 0.119160I$		
$u = -0.002637 - 0.401944I$		
$a = -0.40921 + 2.57831I$	$0.99468 - 3.59879I$	$-0.61353 + 4.53406I$
$b = 1.287540 - 0.119160I$		
$u = 0.387505$		
$a = -3.03811$	$-1.97384$	$-5.96760$
$b = 0.784090$		



$$\text{II. } I_2^u = \langle b^4 + 4b^3u - 4b^3 - 4b^2u + u - 1, a - u + 1, u^2 - u + 1 \rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u - 1 \\ b \end{pmatrix}$$

$$a_7 = \begin{pmatrix} b + u - 1 \\ b \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} b^2u - 2b - u + 1 \\ b^2u - b + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u + 1 \\ -b + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -b - u + 1 \\ -bu + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2b^2u - 4b \\ b^3u - b^3 - b^2u - b^2 - 2bu + b + u - 1 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes =  $-4b^2u + 4b^2 + 8bu + 4u - 4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_3, c_4$	$(u^2 - u + 1)^4$
$c_2$	$(u^2 + u + 1)^4$
$c_5$	$(u + 1)^8$
$c_6$	$u^8 + 4u^7 + 12u^6 + 16u^5 + 15u^4 - 8u^3 - 4u^2 + 1$
$c_7, c_{11}$	$(u^4 + 2u^2 + 2)^2$
$c_8$	$u^8 - 4u^7 + 12u^6 - 16u^5 + 15u^4 + 8u^3 - 4u^2 + 1$
$c_9$	$(u - 1)^8$
$c_{10}$	$(u^4 - 2u^2 + 2)^2$
$c_{12}$	$(u^2 - 2u + 2)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_2, c_3$ $c_4$	$(y^2 + y + 1)^4$
$c_5, c_9$	$(y - 1)^8$
$c_6, c_8$	$y^8 + 8y^7 + 46y^6 + 160y^5 + 387y^4 - 160y^3 + 46y^2 - 8y + 1$
$c_7, c_{11}$	$(y^2 + 2y + 2)^4$
$c_{10}$	$(y^2 - 2y + 2)^4$
$c_{12}$	$(y^2 + 4)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0.344777 + 0.313008I$	$0.82247 - 5.69375I$	$-2.00000 + 7.46410I$
$u = 0.500000 + 0.866025I$ $a = -0.500000 + 0.866025I$ $b = -0.443461 - 0.142082I$	$0.82247 + 1.63398I$	$-2.00000 - 0.53590I$
$u = 0.500000 + 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 1.44346 - 1.58997I$	$0.82247 + 1.63398I$	$-2.00000 - 0.53590I$
$u = 0.500000 + 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0.65522 - 2.04506I$	$0.82247 - 5.69375I$	$-2.00000 + 7.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 - 0.866025I$ $b = -0.443461 + 0.142082I$	$0.82247 + 5.69375I$	$-2.00000 - 7.46410I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0.344777 - 0.313008I$	$0.82247 - 1.63398I$	$-2.00000 + 0.53590I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 1.44346 + 1.58997I$	$0.82247 - 1.63398I$	$-2.00000 + 0.53590I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0.65522 + 2.04506I$	$0.82247 + 5.69375I$	$-2.00000 - 7.46410I$

$$\text{III. } I_3^u = \langle b^3 - 3b^2u - 3b^2 + 3bu + 1, a + u + 1, u^2 + u + 1 \rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ -u - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u - 1 \\ b \end{pmatrix}$$

$$a_7 = \begin{pmatrix} b - u - 1 \\ b \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} b^2u + 2b - u - 1 \\ b^2u + b + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u - 1 \\ b + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} b - u - 1 \\ -bu + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ -b^2 + 2bu + 2b \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes =  $-2b^2u - 2b^2 + 4bu - 4u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_4$	$(u^2 - u + 1)^3$
$c_2, c_3, c_6$ $c_8$	$(u^2 + u + 1)^3$
$c_5$	$(u - 1)^6$
$c_7, c_{10}, c_{11}$ $c_{12}$	$u^6$
$c_9$	$(u + 1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_2, c_3$ $c_4, c_6, c_8$	$(y^2 + y + 1)^3$
$c_5, c_9$	$(y - 1)^6$
$c_7, c_{10}, c_{11}$ $c_{12}$	$y^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$		
$a = -0.500000 - 0.866025I$	$-1.64493 + 2.02988I$	$-6.00000 - 3.46410I$
$b = 0.500000 + 0.866025I$		
$u = -0.500000 + 0.866025I$		
$a = -0.500000 - 0.866025I$	$-1.64493 + 2.02988I$	$-6.00000 - 3.46410I$
$b = 0.500000 + 0.866025I$		
$u = -0.500000 + 0.866025I$		
$a = -0.500000 - 0.866025I$	$-1.64493 + 2.02988I$	$-6.00000 - 3.46410I$
$b = 0.500000 + 0.866025I$		
$u = -0.500000 - 0.866025I$		
$a = -0.500000 + 0.866025I$	$-1.64493 - 2.02988I$	$-6.00000 + 3.46410I$
$b = 0.500000 - 0.866025I$		
$u = -0.500000 - 0.866025I$		
$a = -0.500000 + 0.866025I$	$-1.64493 - 2.02988I$	$-6.00000 + 3.46410I$
$b = 0.500000 - 0.866025I$		
$u = -0.500000 - 0.866025I$		
$a = -0.500000 + 0.866025I$	$-1.64493 - 2.02988I$	$-6.00000 + 3.46410I$
$b = 0.500000 - 0.866025I$		



#### IV. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$((u^2 - u + 1)^7)(u^{35} + 54u^{34} + \dots + 132u - 1)$
$c_2$	$((u^2 + u + 1)^7)(u^{35} - 6u^{34} + \dots - 4u + 1)$
$c_3$	$((u^2 - u + 1)^4)(u^2 + u + 1)^3(u^{35} + 2u^{34} + \dots + 2u - 1)$
$c_4$	$((u^2 - u + 1)^7)(u^{35} - 6u^{34} + \dots - 4u + 1)$
$c_5$	$((u - 1)^6)(u + 1)^8(u^{35} + 3u^{34} + \dots - 83u + 13)$
$c_6$	$(u^2 + u + 1)^3(u^8 + 4u^7 + 12u^6 + 16u^5 + 15u^4 - 8u^3 - 4u^2 + 1)$ $\cdot (u^{35} + 2u^{34} + \dots + 178664u + 28669)$
$c_7, c_{11}$	$u^6(u^4 + 2u^2 + 2)^2(u^{35} + u^{34} + \dots + 4u + 4)$
$c_8$	$(u^2 + u + 1)^3(u^8 - 4u^7 + 12u^6 - 16u^5 + 15u^4 + 8u^3 - 4u^2 + 1)$ $\cdot (u^{35} - 2u^{34} + \dots + 342120u + 112661)$
$c_9$	$((u - 1)^8)(u + 1)^6(u^{35} + 3u^{34} + \dots - 83u + 13)$
$c_{10}$	$u^6(u^4 - 2u^2 + 2)^2(u^{35} - u^{34} + \dots - 1020u + 404)$
$c_{12}$	$u^6(u^2 - 2u + 2)^4(u^{35} - 15u^{34} + \dots - 80u + 16)$

## V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$((y^2 + y + 1)^7)(y^{35} - 138y^{34} + \dots + 4900y - 1)$
$c_2, c_4$	$((y^2 + y + 1)^7)(y^{35} + 54y^{34} + \dots + 132y - 1)$
$c_3$	$((y^2 + y + 1)^7)(y^{35} + 6y^{34} + \dots - 4y - 1)$
$c_5, c_9$	$((y - 1)^{14})(y^{35} - 55y^{34} + \dots - 1795y - 169)$
$c_6$	$(y^2 + y + 1)^3$ $\cdot (y^8 + 8y^7 + 46y^6 + 160y^5 + 387y^4 - 160y^3 + 46y^2 - 8y + 1)$ $\cdot (y^{35} + 42y^{34} + \dots - 5590382760y - 821911561)$
$c_7, c_{11}$	$y^6(y^2 + 2y + 2)^4(y^{35} + 15y^{34} + \dots - 80y - 16)$
$c_8$	$(y^2 + y + 1)^3$ $\cdot (y^8 + 8y^7 + 46y^6 + 160y^5 + 387y^4 - 160y^3 + 46y^2 - 8y + 1)$ $\cdot (y^{35} - 90y^{34} + \dots - 117701124860y - 12692500921)$
$c_{10}$	$y^6(y^2 - 2y + 2)^4(y^{35} + 15y^{34} + \dots - 4334416y - 163216)$
$c_{12}$	$y^6(y^2 + 4)^4(y^{35} + 15y^{34} + \dots + 768y - 256)$